

THE CHIRONIAN

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THE CHRONIAN

"In Essentials, Unity; In Non-Essentials, Liberty; In All Things, Charity."

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What is Conservative Surgery?*

BY

W. FRANK FOWLER, CLASS OF 1902.

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IN the light of increasing surgical invasion of fields hitherto strictly medical, it is well to consider what constitutes conservative surgery. We use the term "conservative" in its dual sense of preservation and adherence to accepted methods. Discussion of this question demands consideration of definite pathological states.

The diabetic, always a poor surgical risk, may have pre-operative preparation for the less urgent surgery of gall stones, internal appendicitis or hernia. This preparation, of course, consists in rendering the patient sugar free by the starvation method of Allen. As indicated by Brickner¹ we are here confronted with the problem of what effect preoperative starvation might have upon surgical convalescence. There is also the question of judgment as to whether the diabetic is in greater danger from his surgical pathology than he would be from operation. In conditions demanding immediate or early operation, such as strangulated hernia or diabetic gangrene, we can only attempt

*Read before the Monroe County Homeopathic Medical Society, January 25th, 1916.

to overcome the acidosis by the administration of massive doses of bicarbonate of soda. In our humble opinion this is usually a futile expedient.

We are ordinarily justified in waiting twenty-four hours to determine whether or not diabetic gangrene will show a line of demarkation. A spreading, moist gangrene and the ever present danger of infection demand amputation. If there is pulsation in the popliteal artery we may amputate below the knee. We believe that amputation should not be lower than the middle of the leg, in spite of the axiom that operative danger increases with the height of the saw line. Surely one amputation is more conservative than two.

The sufferer from exophthalmic goitre, with damaged myocardium and unstable nerve control, is also a bad risk. This individual is, however, infinitely safer on the operating table than is the diabetic provided the proper operation is performed and the proper time for its performance chosen. If there is extreme tachycardia and nervous instability rest in bed under the care of the internist may be indicated for a time. The exceptional case may become a surgical emergency and demand immediate ligation of one or both superior thyroids. Usually, however, ligation is best performed after the mitigation of symptoms. During a visit to the Mayo clinic we heard Judd state that the course of this disease is characterized by exacerbations and remissions, and that operation is safest during the latter stage. At the proper time, then, ligation is done and in a few days, if necessary, the other side is ligated. In the two or three months following ligation there may be a gain in weight of 20 to 30 pounds, but unless the gland is partially removed at this time the patient will revert to her former condition. At the Mayo clinic it is the usual custom to perform a partial thyroidectomy from seven to ten days after the ligation. The latter is preferably done under local anesthesia. There are cases, of course, in which favorable condition of the patient warrants immediate operation upon the gland. Conservative surgery of this condition, then, demands that the indicated operation be performed at the proper time.

The present indications for operation in fractured skull do not rest upon the mere existence of the fracture as formerly,

but depend rather upon heightened blood pressure, bradycardia, inequality of the pupils, stertorous, slow respirations, etc., the symptoms of intra-cranial pressure. The opinion has been advanced that operation is seldom if ever indicated in fracture of the base because the site of injury is inaccessible. This dictum is at variance with the practice of Cushing and others in performing decompression in cases of irremovable brain tumor, and the belief of Remsen² that simple decompression may be life saving in apoplexy. Conservative surgery would seem to demand the relief of pressure by means of simple decompression whether the pressure be due to intra-cranial hemorrhage from whatever cause, or whether it be due to brain tumor.

Death follows fracture of the skull, not as a result of trephine operation, but in spite of it—and sometimes for the want of it.

An example of the invasion of the medical field by surgery may be found in the further statement of Remsen² that direct drainage of the hemorrhagic cavity or evacuation of the clot in apoplexy may greatly influence the hemiplegia, if done sufficiently early.

Crile's³ incursion into the field of the internist consists in an operation for the cure of diabetes. In accordance with his theory that this disease is due to over-activity of the ductless glands he performed the following operations upon an advanced diabetic: (1) Section of the right cervical sympathetic; (2) left supra-renalectomy, and (3) excision of the left cervical sympathetic with partial thyroidectomy. As a result the patient is sugar free.

Willy Meyer⁴ commands respect as a pioneer in the field of esophageal surgery. Repeatedly he attempts resection of the esophagus for carcinoma. Each operation is a trying ordeal lasting two, three or four hours with death of the patient and disappointment as the result, but eventually he will be successful, the technique will be simplified, and other surgeons will follow his lead. The radical surgery of to-day may be conservative to-morrow, but the performance of esophageal resection will, in the requisite anatomical knowledge and technical skill to justify all probability, always be confined to some few men who have the requisite anatomical knowledge and technical skill to justify such an undertaking.

The conservative treatment of malignancy, in general, demands early and wide excision. Some surgeons shrink from a breast amputation of the type of Rodman or Halsted as being unnecessarily mutilating. We cannot, however, ignore the dictum of Rodman, the Mayos and others that extensive tissue removal is here essential. The Wertheim⁵ operation for cervical carcinoma (the operation is not usually justified for carcinoma of the body of the uterus) has given an encouraging percentage of five year cures (43 per cent. according to Wertheim) in the hands of Wertheim, Taylor, Peterson and others. Unfortunately, however, the immediate mortality is high, 9 per cent., as a result of shock, hemorrhage, ureteral or rectal fistula, cystitis, etc. The average surgeon, therefore, will have as good or better end results from simple hysterectomy. In epithelioma of the lip the submental lymphatics should be excised on both sides in addition to lip resection. Inadequate operation for malignancy is worse than useless.

An old prostatic with infected urine is a poor surgical risk, but proper preparation may give him a fair chance. He should be put to bed, given large quantities of water, his residual urine removed at intervals, his bladder drained supra-pubically if necessary, and his kidney function improved if possible. Even though his urine be not infected a weak old man may sometimes be operated upon more safely in two stages. Judd states that when stones are present in the bladder the prostate should always be removed at a secondary operation. Supra-pubic drainage may be done under local anesthesia. Enucleation of the prostate is safe in some hands with spinal anesthesia, but generally safest under nitrous oxide. Ether or chloroform add greatly to the operative risk. If all prostatectomies were completed in five to ten minutes, as they are in the hands of skilled genito-urinary surgeons, the anesthetic risk would be negligible. The prostatic who is a fair risk, or who can be converted into such, is entitled to operation. The practice of giving him a catheter and sending him away to infect himself cannot be too strongly condemned. Squier⁶ states that the average length of catheter life is two years and eight months.

The inherent right of any man to decide whether he shall or shall not operate in any given case is unquestioned, and is fre-

quently a matter of judgment. Among the factors which decide against operation may be high general mortality, or high mortality for that particular surgeon in the condition under consideration. A regard for personal reputation may decide the issue. Although the patient is willing to stake his life upon the outcome, the surgeon is reluctant to risk his reputation. Under such circumstances refusal to operate is beyond criticism, provided the impression is not left with the patient that surgery holds no hope for him. He is entitled to his chance, if not with that surgeon, then with some other.

In regard to the case of the Bollinger baby Wile⁷ says: "In the light of the well recognized tremendous, preventable, infant mortality rate, in the light of the inadequate obstetrical and nursing care, and in the face of nature taking its course in thousands of instances, where mere hygiene, education, or living wages could prevent it, has there not been too great a storm of emotionalism over the death of the unfortunate, and fortunate, mental weakling and physically deformed infant of Chicago? The main question is not so much, should this particular child have been permitted to die without an operation that could not have cured it, but is there any social or moral reason justifying society in permitting mentally normal children to die from preventable causes at which society feels no moral revulsion?" Possibly a solution of the problem presented by the case of this distorted mite may be found in the consensus of opinion of consultants, referred to the parents for final decision.

Appendicitis is a dangerous disease largely because medical treatment is seldom fatal. A mortality based on the total number of cases is low. The mortality of cases which come to operation is high. A family physician may carry his patient through many catarrhal attacks, but there comes a time when a patient, apparently better one day, is decidedly worse the next. The hurriedly summoned surgeon finds a gangrenous or perforated appendix, with a varying degree of peritonitis. He may be called to a moribund patient, in which event, of course, operation is worse than useless. Refusal to operate is a just rebuke to negligence.

In regard to intestinal obstruction McGlannan⁸ says: "Early recognition and prompt treatment, before toxemia has developed,

offer the only hope we have at present for reducing the high mortality rate. In the stage of onset the symptoms are pain, which is usually intermittent, and crampy, nausea and vomiting. These symptoms come on suddenly and without regard to the ingestion of food. Evacuation of the bowels does not relieve the pain. If a patient is suddenly seized with abdominal pain, and an effectual enema combined with gastric lavage does not bring relief from the pain, a diagnosis of acute intestinal obstruction should be made and operation promptly performed. If there is any hesitation about operating on such slight symptoms, a second lavage should be done after an hour. The presence of duodenal material in the washings at this time makes the diagnosis certain and operation imperative. McGlannan reports eighteen cases operated during the stage of onset the diagnosis being made on these symptoms. In every case amechanical obstruction was found and relieved, and all these patients recovered." This paper of McGlannan causes speculation if the symptoms for which we usually operate in intestinal obstruction are not indicative of a stage analogous to that of a ruptured or gangrenous appendix.

Certain cases should be unhesitatingly referred to men who have perfected themselves in some one operation or group of operations, as, for example, excision of the gasserian ganglion. It was our pleasure to refer such a case, through the attending physician, to Cushing. The patient returned to his home free from pain and we have appropriated a small share of his gratitude.

We must continually be on guard against the lure of the brilliant, spectacular surgical procedure. Of this class Cæsarean section is an example; an excellent operation when indicated, but performed too often because of its histrionic appeal, when some slower, less interesting, but more conservative obstetrical maneuver might serve as well or better. Of this class, also, is the colectomy of Lane; although unquestionably indicated for the relief of Hirsprung's disease, the operation has yet to justify itself as a cure for intestinal stasis.

Operations for apoplexy and diabetes, colectomy for intestinal stasis, etc., should be left to the pioneers for the present. These men are too big to be accused of pernicious radicalism. The

great body of surgedns, however, awaits the test of time. We have all, at one time or another, attended the birth of some surgical panacea, and the next month or year have witnessed its departure. Our attitude, therefore, is largely dictated by caution and reason, but in addition, the judgments of the laity and the opinions of colleagues cannot be entirely ignored.

Conservative surgery, then, demands of the surgeon that he perform any operation within his ability, provided the patient be given his best chance thereby, no matter how slight that chance may be, but only with full understanding, on the part of the patient or family, of the risks which must be run, with and without operation.

We would alter a recent aphorism of Justice Benton to read: "Surgery was created for patients, not for surgeons."

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²Remsen, *Surgery, Gynecology and Obstetrics*, Dec., 1915.

³Crile, *Journal A. M. A.*, Dec. 18, 1915.

⁴Meyer, *Surgery, Gynecology and Obstetrics*, Dec., 1912, and Feb., 1915.

⁵Weibel, *Surgery, Gynecology and Obstetrics*, March, 1913.

⁶Squier, *Surgery, Gynecology and Obstetrics*, Oct., 1913.

⁷Wile, Editorial, *Amer. Journal of Surgery*, Jan., 1916.

⁸McGlannan, *Journal A. M. A.*, Aug., 1915.

But incomparably more frequent than the blending and consequent complication of natural diseases, are the artificial disorders, produced when unsuitable remedial measures are applied for a long time to bodies attacked by chronic disease. For such remedial measures, having no impulse similar to that of the disease for which they are given, are unable to remove it and cure it homeopathically; but on the contrary they attack the body over a long period of time in a dissimilar way, and thus gradually bring about an inner reaction of a dissimilar kind, in short, an artificial chronic disease, which unites with the original chronic disease and so builds up a new monstrous disorder, a complicated malady, which is often of a very obstinate kind.—*Organon of the Rational Art of Healing*.

**Diagnostic Interpretation of
Urinary Findings,
From a Chemical Standpoint**

BY

LINDSLEY F. COCHEU, CLASS OF 1904.

THE interpretation of the urinary findings is an intensely interesting study because of their great etiologic and prognostic significance. At times the cause of a pathologic condition may be determined from the urinary findings alone; but in the great majority of cases such procedure is dangerous, simply because any one given factor in the findings may have been brought about by one or more of a long list of preceding conditions. If one looks at the findings from a prognostic point of view a like difficulty is encountered, for if we are confronted with two cases having similar urinary findings produced by different causes, our prognosis may have to be different in each case.

It is certain that if a correct conclusion is to be drawn, all of the available clinical evidence must be considered in conjunction with the urinary findings. The individual with a fair knowledge of medicine and a large experience in the interpretation of urinary findings is able to make many a lucky guess. My experience has, however, demonstrated to me the fallacy of drawing conclusions from the urinary findings alone except in certain selected cases.

In the following lists, hygienic and dietetic conditions, drugs, symptoms and diseases have been named in alphabetical order without any attempt to classify them. Duplications may be made. For example, a drug may be given as one of the causes of the condition under discussion and, later on, the class of drugs to which it belongs may also be given. Again, the reader may find omissions of drugs, disease conditions, etc., which his experience has taught him should have been included. The writer hopes that such occurrences will be overlooked by the physician who may use this paper as a ready reference of helpful hints of diagnostic or prognostic value.

The examination of a single specimen or of a twelve hour specimen is a mistake whenever it is possible to obtain a sample of that passed during a period of twenty-four hours. This remark will, I think, be justified as the paper proceeds. We are apt to allow the inconvenience the patient is put to in collecting a twenty-four hour specimen to take precedent over the great advantage derived by the patient when such a specimen is examined. One of the first things presented along this line is the knowledge derived from the actual quantity passed in twenty-four hours.

The young infant passes about three times as much per pound of body weight as the adult does, but as childhood advances the proportionate amount passed by the child approaches quite rapidly the adult standard, which is about 10 c. c. for every pound of body weight. The average adult eliminates from each kidney about 30 c. c. per hour. The quantity eliminated is lowest at night, increases in the morning, and reaches its height in the late afternoon. The twenty-four hour quantity may be influenced by many conditions.

TWENTY-FOUR HOUR AMOUNT:

1st month	200 to 300 c. c.
1st year	300 to 400 c. c.
3 to 6 years	300 to 600 c. c.
8 to 12 years	600 to 900 c. c.
Adult	1200 to 1500 c. c.

AMOUNT INCREASED BY:—

Acetates.	Digitalis.
Acromegaly.	Dropsy, after reduction of.
Altitudes, low.	Eating, hearty.
Anæmia.	Electricity, stimulus of.
Angina pectoris.	Epilepsy.
Asthma.	Exercise, moderate.
Calomel.	Fluid, excessive drinking of.
Cardiac hypertrophy with increased blood pressure.	Hydronephrosis (intermittent).
Chlorosis	Hysteria.
Chorea.	Infections, height of acute.
Citrates.	Kidney, Amyloid.
Constipation.	“ floating.
Convalescence, during.	“ multilocular cystic.
Convulsions, after.	“ Tubercular (early stage).
Diabetes insipidus.	Locomotor ataxia.
“ mellitus.	Migraine.
	Myxedema.
	Nephritis, chronic interstitial.

Neurasthenia.	Gout.
Nervous excitement.	Heart failure.
Oxygen, stimulus of.	Hemorrhage.
Paralysis agitans.	Influenza.
Phosphaturia.	Intestinal obstruction.
Pituitary, disease of.	Kidney, atrophy of.
Pyelitis, chronic.	“ acute congestion.
Resorption of effusions.	“ passive congestion.
Salicylates.	“ embolis in.
Theobromine.	“ fatty.
Thyroid disease.	Lead poisoning, chronic.
Weather, cold.	Lung, collapse of.
“ humid.	Melancholia.
AMOUNT DECREASED BY:—	Mercury.
Altitudes, high.	Nephritis, acute.
Anæsthetics, after.	“ acute aggravation of
Arsenic.	chronic.
Ascites.	“ sub-acute with dropsy.
Bronchitis, chronic.	Opium.
Cantharides.	Peritonitis.
Carbolic acid.	Pneumonia.
Cardiac dilatation.	Pneumothorax.
Cholera.	Pyrexia.
Colic.	Rest and quiet.
Convulsions, during.	Shock.
Diarrhoea.	Stomach, dilatation of.
Diet, low.	Thrombosis of large vein.
“ low fluids in.	Tumor, abdominal.
Exercise, excessive.	Uremic attacks, acute.
Fever, relapsing.	Vomiting.
Gastritis, chronic.	Weather, hot dry.

TRANSPARENCY.

The urine is normally transparent when passed. There may be a slight cloudiness due to the presence of mucus which, in women, often has no pathologic significance. Unfortunately the cloudiness of a urine often means nothing more than bacterial decomposition, and as a result necessitates making a report not so useful as one would wish. Frequently this source of trouble enters because specimens are sent in beer bottles, sour milk bottles, etc.

In a large percentage of the more severe kidney diseases the urine is apt to be perfectly transparent.

TRANSPARENCY: Normally the urine is transparent.

CLOUDY:

Bacterial decomposition (collected in unclean vessels or sent in dirty bottles).
 Bronchitis, capillary (urates).
 Calculus (urates, uric acid, oxalates).
 Cystitis (pus, phosphates).
 Diabetes mellitus (oxalates, uric acid).
 Diet, vegetable (phosphates).
 Digestive organs, diseases of (urates, phosphates, oxalates).
 Fevers (oxalates, urates).
 Gonorrhœa (pus).
 Gonorrhœal, post- (phosphates).
 Gout (oxalates).

Infections, acute (urates).
 Kidney, tubercular (blood).
 Liver, diseases of (urates).
 Lungs, diseases of (urates).
 Malingerers (milk, vinegar).
 Nephritis, post scarlatinal (blood).
 Nervous disease (phosphates).
 Parasites.
 Pneumonia (urates).
 Prostate, enlarged (phosphates).
 Prostatitis (pus).
 Pyelitis (pus, bacteria, phosphates).
 Rheumatism (urates, oxalates).
 Stone (blood).
 Thoracic duct, obstruction of.
 Tumors (blood).
 Weather,^r cold.

REACTION.

The acidity of a urine is often a difficult factor to determine accurately. Alkaline decomposition may set in before the examination is made, so that a urine which was acid when passed may prove to be alkaline when examined. The reaction of the urine which was alkaline when passed more often depends for its reaction upon the volatile alkalies. Hence a urine which was alkaline when passed may be reported as acid on examination. Fixed alkalies usually cause pain on urination especially at the end of the act. Volatile alkalies usually produce an irritable inflamed mucous membrane.

There has been much discussion regarding the method of determining the reaction. In the writer's experience the litmus test gives poor results with many specimens when they reach the laboratory. Of the clinical methods advanced the most satisfactory results are obtained by titrating with decinormal sodium hydrate solution using phenolphthalein as an indicator.

REACTION: Normal 20° to 40°.

INCREASED ACID:

Acid Benzoic.
 " Boric.
 " Mineral.
 Calculus, renal.
 Concentration.
 Dermatitis.
 Diabetes mellitus.

Diet, nitrogenous.
 Exercise, muscular.
 Gout.
 Indicanuria.
 Leukemia.
 Lithæmia.
 Liver, diseases of.
 Malaria, during paroxysm.

Nephritis, chronic.	Infants.
Perspiration, excessive.	Intestinal diseases.
Pleurisy.	Liquids, increased ingestion of.
Pneumonia.	Nervous diseases.
Pyelitis.	Potatoes, excessive amount of, in diet.
Rheumatism.	Tartrates.
Saccharin.	Vomiting, after.
Scarlet fever.	ALKALINE REACTION:
Scurvy.	Atrophy, acute yellow.
Starvation.	Calculus, vesical.
Stomach, dilatation of.	Cystitis.
DIMINISHED ACID:	Diet, vegetable.
Acids, vegetable.	Hyperchlorhydria.
Anæmia.	Kidney, tubercular.
Chlorosis.	Malaria, intervals.
Citrates.	Retention of urine.
Diabetes insipidus.	Spinal injury.
Diet, non-nitrogenous.	

COLOR.

The color of a normal urine is commonly yellow or amber. A normal color does not, however, indicate a normal urine, for many samples having that characteristic indicate in other respects serious conditions.

The urine passed early in the morning is darker than that passed as the day progresses, and as a rule the color runs hand in hand with the specific gravity. If there is much sediment the color of the urine will be materially affected so we should determine the color from a filtered sample. This is best done in a fair sized container against a white background. A standard four ounce test glass serves the purpose well.

COLOR: Normal color pale amber.

LIGHTER.	Gout, chronic.
Anæmia.	Hysteria.
Asthma, spasmodic.	Kidney, amyloid.
Childhood.	" cirrhosis of.
Chlorosis.	Nephritis, chronic catarrhal.
Convalescence, during.	Stomach, atony of.
Day voidings, as compared to night voidings.	Tannin taken internally.
Diabetes insipidus.	DARKER.
" mellitus.	Adults.
Diuretics.	Anæsthetics, after.
Epilepsy.	Coffee, drinking strong.
Fluids, copious drinking of.	Drinking, avoidance of.
	Dropsies.

Duodenal catarrh.	Rhubarb.
Dysentery.	Santonin (in alkaline urine)
Dyspepsia.	Senna (in alkaline urine).
Exercise, after violent.	Sulphonal.
Gastritis.	Trional.
Gout.	BROWN or BLACK.
Infants, bottle fed.	Anæmia, pernicious.
Infections, acute.	Antipyretics, a number of.
Influenza.	Antipyrin.
Kidney, acute congestion of.	Carcinoma.
Lithæmia.	Carbolic acid.
Liver, carcinoma of.	Creolin.
" cirrhosis of.	Creosote.
" congestion of.	Cyanides.
Meals, after hearty.	Gallic acid.
Morning specimen compared to	Hæmoglobinuria, paroxysmal.
that passed during day.	Hemorrhage.
Peritonitis.	Hydrochinon.
Pernicious anæmia.	Indicanuria.
Pyrexia.	Jaundice.
Rheumatism.	Lysol.
GREEN or BLUE.	Logwood.
Berries (in alkaline urine).	Melanosis.
Methylene blue or other dye stuffs.	Naphthalene.
Salicylic acid in large doses.	Naphthol.
PINK.	Potassium chlorate.
Dye stuffs.	Pyrogallic acid.
Picric acid poisoning.	Quinine.
REDDISH.	Salicylic acid.
Alizarin.	Salol.
Aloes.	Sarcoma, melanotic.
Analgen.	Sulphuric acid.
Aspirin.	Tannin.
Beets.	Tar.
Berries (in acid urine).	Thallin.
Buckthorn.	Terpin hydrate.
Cascara (in alkaline urine).	Turpentine.
Chelidonium.	Uva ursi.
Chrysarobin.	Resorcin.
Dye stuffs.	Tuberculosis.
Phenolphthalein.	

ODOR.

A normal urine has a peculiar aromatic odor, which is easily affected by articles of food and drink; such changes as those produced by onions, coffee, garlic, asparagus, etc., can hardly be said to have any clinical significance. A decomposing odor is too fre-

quently caused by collecting the specimen in a vessel which has not been thoroughly cleansed, or by placing the sample for examination in an old bottle. Samples are often sent in bottles which have contained Listerine or other odorous compounds, and at times patients are found who add perfume to the sample so as to overcome its disagreeable odor.

To obtain the best results the patient should collect the urine in an absolutely clean vessel and pour it directly into a large (5 pint) clean bottle. The bottle is easily handled and may with safety be placed where it will keep cool. If decomposition is feared, five or ten grains of Thymol may be placed in the bottle. This latter procedure will, of course, affect the odor of the specimen so no conclusions may be drawn from that property. It will not, however, interfere with the regular chemical or microscopical examinations.

ODOR.

Normal, peculiar aromatic.

NO ODOR.

Chronic interstitial nephritis.

Obstructive retention.

ODOR OF BLOOD.

Hemorrhage from lower urinary tract.

AMMONIACAL WHEN PASSED.

Bladder, carcinoma of.

" stone in.

Cystitis.

Prostate, enlarged.

Suppurative condition in urinary tract.

Ulcer.

FECAL ODOR.

Contamination by stool.

Fistula.

Suppurative condition involving intestine.

ODOR OF ROTTEN EGGS.

Same causes as fecal odor.

ODOR OF STALE FISH.

Bacteriuria.

SWEETISH ODOR.

Large amount of sugar.

FRUITY ODOR.

Acetone.

ODOR OF VIOLETS.

Terebene.

Turpentine.

SPECIFIC GRAVITY.

The specific gravity of the urine depends upon the amount of solid material in solution. Where no conveniences are at hand for determining the amount of the various solids, a knowledge of the specific gravity is of great importance. If, on the other hand, the amounts of the various solids are determined as they should be, it is wiser to draw our conclusions from what they tell us rather than from what we learn of the mixed solid elimination as revealed by the specific gravity.

SPECIFIC GRAVITY.

Average NORMAL for ADULT, 1.018-1.025.

Average NORMAL for INFANTS, 1.004-1.006.

HIGHER.

Anæsthetics, after administration of.

Colic.

Diabetes mellitus.

Diet, animal.

“ salt in.

Dropsy, increasing.

Gout, acute.

Hæmaturia.

Hepatic diseases.

Heart failure.

Infections, acute.

Kidney, acute congestion of.

Leukæmia.

Lithæmia.

Melancholia.

Morning, in early.

Nephritis, acute.

Nephritis, chronic (with large amount of albumin).

Neurasthenia.

Perspiration, after profuse.

Pneumonia, early in.

Pyrexia.

Retention, after long.

Rheumatism, acute.

LOWER.

Anæmia.

“ pernicious.

Chlorosis.

Chyluria.

Colic, after relief from.

Diabetes insipidus.

Diuretics, after.

Drinks, alcoholic.

Dropsy, reduction of.

Epilepsy.

Fluids, after ingestion of large amounts of.

Gout, chronic.

Hydronephrosis.

Hysteria.

Infections, during convalescence from acute.

Kidney, amyloid.

“ cirrhosis.

“ cystic.

Malaria, during chill of.

Myxedema.

Nephritis, chronic (with small amount of albumin).

Nephritis, sub-acute.

Osler's disease.

Rest, during.

Toxæmias.

Tuberculosis.

Weather, cold.

UREA.

Of all the solid material eliminated, the urea is probably most important, for it goes to make up almost half of the total. In a general way the amount excreted depends upon the amount of nitrogenous in-take, the ability of the organism to carry on nitrogenous metabolism, and the amount of tissue waste. The extremely young infant eliminates about two-thirds as much urea per pound of body weight as the adult does, while the growing child eliminates from the same amount to twice as much as the adult does per pound of body weight. An adult eliminates from 20 to 30 grams in twenty-four hours, and when the urea bears a normal relation to the total solids it is quite common to find

that the percentage of urea is represented by the last two figures of the specific gravity (as specific gravity 1.018, urea 1.8 per cent.).

In diseases such as pneumonia or typhoid where there is rapid wasting away of the patient, a knowledge of the amount of urea in comparison to the other solids, notably the chlorides and sulphates, will often give an idea of the area of tissue involved and the degree of virulence of the attack.

In diseases of a more or less chronic nature where the ability of the kidney to eliminate urea is lowered, the skin must of necessity take up some of this work, and it has been found that one of the signs of approaching death is the accumulation of crystals of urea which usually form a greasy covering on a cold, clammy skin.

UREA: Normal 20 to 30 grams in twenty-four hours.

HIGHER.

Ammonium salts.
 Anæmia, pernicious.
 Antimony.
 Arsenic.
 Atrophy, muscular.
 Baths, hot.
 Catarrh, diffuse bronchial.
 Chorea.
 Codeia.
 Convulsions.
 Day, during.
 Diabetes insipidus.
 " mellitus.
 Diet, nitrogenous food in excess in.
 Diuretics, alkaline.
 Dyspneic conditions.
 Electrical stimulation.
 Epileptic attacks.
 Exercise, mental or physical.
 Exudates, resorption of.
 Gout, chronic.
 Infections, acute (as convalescence begins.)
 Leukæmia.
 Malaria, during warm stage.
 Nephritis, acute.
 Paralysis agitans.
 Pneumonia.

Pyæmia.

Pyrexia.

Quinine, large doses of.

Rheumatism, acute.

Scarlet fever.

Scurvy.

Thyroid extract.

Typhoid fever.

LOWER.

Addison's disease.

Anæmia.

Cholera.

Diarrhœa.

Diet, low in nitrogenous food.

Fevers, during convalescence from acute.

Fever, yellow.

Kidney, atrophy of.

 " passive congestion of.

Liver, acute yellow atrophy of.

 " cancer of.

 " cirrhosis of.

Melancholia.

Menstruation.

Nephritis, acute with dropsy.

 " chronic.

 " chronic interstitial.

 " subacute with dropsy.

Osteomalacia.

(Continued on page 52)

The Chironian

The monthly Journal of the Alumni Association of the New York Homeopathic Medical College and Flower Hospital.

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EDITORIAL

THE August number of the CHIRONIAN comes off the press during the hottest month of the summer season. Doubtless, most of our readers already will be spending their vacations out of the city. It will be well if this summer those who have borne the stress and strain of a hard winter's work be careful of themselves. For nearly two years because of the chaotic conditions of affairs in Europe, as well as the unsettled state of things in our own country, men's minds and nerves have been subjected to more than usual stress and strain. Good times have been exhilarating and men have made most of them, but even through a period of unparalleled prosperity one cannot escape the troubles of the world.

Our compassion has been excited, and our sympathy has been stirred by conditions in Europe, and men have been keyed to the point of anxiety by our own diplomatic proceedings.

We have gone about our affairs from day to day, only taking the usual amount of rest and recreation and apparently only suffering the usual amount of fatigue. Nevertheless, all the time, subconsciously, the disrupted state of the world has been exerting a subtle wear and tear upon our spiritual organization. Old

confidences have been shaken. Still holding to our ideals we realize as never before how far the actual in humanity is from the ideal, and the necessary adjustment has made us exercise an unusual amount of optimism and concentration.

We are cheerful, our hopes are as buoyant as ever, but war has become a familiar and inevitable fact which has made us unconsciously turn away from some of our own moral moorings.

The currents of power that govern nations has taken new direction breaking through the bounds and barriers of ages. The effect upon us, as we look within, has been little less than startling and to meet the needs of every day living we have had to furnish a new dynamic for the soul.

THE past few months has brought very near to us a trouble of our own which makes us more tense and thoughtful. We have seen large companies of young men parade our streets, at length to go to the border of Mexico, some of them, perhaps, never to return.

Newspaper reports every day confirm our fears of the present existing conditions in Mexico, which no nation of honor could tolerate forever. We know not the hour when this country may be embroiled in warfare more bloody than it has ever witnessed before. Our mental poise cannot remain undisturbed.

Hot weather is here. We owe it to ourselves this summer to get from day to day a little more fresh air, a little more rest, a little more play and a little more tonic contact with nature. We have been under a constant strain, and we are work-tired.

The CHIRONIAN wishes its readers a happy vacation, and sincerely trusts that it may meet the needs of body and mind bringing refreshing and renewed vigor for the coming fall.

THE Directory of the Alumni Association will be published as a September number. This Directory has heretofore been issued separately, but this year it will be a valuable adjunct to the CHIRONIAN and to our readers.

It is hoped that it will meet with the sincere appreciation of all. As intimated in a previous number THE CHIRONIAN for the coming year will be even on a better basis than before, and the

hearty co-operation of all the alumni is earnestly requested by the CHIRONIAN Committee. Hitherto unpublished papers of merit will be greatly appreciated. Advertisements will always be welcomed. In fact, too many cannot find their way to the office of the Business Manager. Personal news items and all matter of interest will be gladly received. Changes in addresses will be promptly made. Friendly criticism is asked and above all THE CHIRONIAN needs the right moral support that will make it one of the leading Medical Journals of Homeopathy. "They can who think they can" is a good working principle and when put into practice who knows what may be the outcome? Success is in sight. Will you lend a hand during 1916-1917?

The tincture of an ounce of cinchona-bark mixed with a couple of pounds of water and swallowed in the course of twenty-four hours will certainly produce a cinchona fever of several days' duration. A warm foot-bath of an arsenical solution or the application of an arsenical ointment to the scalp will no less certainly bring about an arsenical fever lasting at least a fortnight, than residence in a marshy district in autumn will cause intermittent fever. A girdle of mercurial plaster round the loins will cause mercurial poisoning no less quickly and surely than wearing the shirt of a person affected with the itch will produce an attack of the itch. A strong infusion of elder flowers or a few berries of belladonna are just as much disease-producing forces as inoculated vaccine-matter, or a viper-bite, or a great shock, and every one of these influences, just because it has the power to produce disease, can become a remedy and a force to counteract disease, as soon as it is opposed to a similar disorder already existing in the body. So that all that we call medicine is no other than the power to produce disease, and all true remedies are no other than substances capable of arousing in the organism an artificial disease similar to the natural disease which it is thereby able to destroy and to remove.—*Organon of the Rational Art of Healing.*

(Continued from page 48)

Paralysis, general.	Tuberculosis.
Poisoning, lead.	Tumors, ovarian and uterine.
Pregnancy.	Uræmia.
Pyorrhœa alveolaris.	“ before attack.
Rheumatism, chronic.	Vegetarians.
Rickets.	Vomiting, excessive.
Sedentary habits.	Water, continued excessive drink-
Starvation.	ing of.
Syphilis.	

TOTAL SOLIDS.

The elimination of solid material is influenced by different factors. The principal ones are age, weight, diet and exercise. The maximum amount is eliminated by an adult at about forty years of age, and in a rough way there may be said to be a reduction of 10 per cent. for each additional ten years of age. The solids increase with the weight, the amount of food eaten and the amount of exercise taken. The average patient who is sick enough to be confined to the house or to his bed passes from ten to forty per cent. less of solid material than he would when attending to his regular duties. Of course, the particular disease from which he suffers may have a marked affect on increasing the total solids.

When we have a urine which is about normal the use of Haser's Coefficient for the determination of the total solids gives good results; but where there is a variation from the normal in some of the constituents, especially if it be in the sodium chloride, then Haser's Coefficient is not to be depended upon.

An attempt to state the conditions which tend to increase or decrease the total solids would practically be a repetition of the statements made under Urea.

SODIUM CHLORIDE.

Of all the solid materials eliminated by the kidney, sodium chloride is one of the most important. In a rough way urea makes up half of the total solids and the sodium chloride about one-half of all the rest. It is probably a fact that sodium chloride plays but a small part in metabolism other than as an aid to osmosis, for it has been found that a patient eliminates almost all of the sodium chloride given in the diet. It is a fact well known in physics that it is necessary to add sodium chloride to certain solutions in order that the solids which were already in that liquid

may be carried from one side of an animal membrane to the other. Knowing this, the great clinical significance of the amount of sodium chloride in the urine is easily seen. When we have to deal with a disease where fluid is accumulating in some part of the body the sodium chloride is diverted to that part and a correspondingly smaller amount is found in the urine. From the amount found one may estimate how much was used elsewhere, and hence be placed in a position to judge fairly the extent of the pathologic process. Pneumonia, pleurisy, toxemias, effusions, typhoid, etc., are all conditions where the prognosis depends largely upon the amount of sodium chloride found in the urine. Example: no matter what the outward signs, if we have clinical symptoms of typhoid, a negative Widal and the sodium chloride reduced to a very few grams, a bad or hopeless prognosis will have to be made. We have then a patient who is not reacting as evidenced by the negative Widal, and the low sodium chloride elimination indicates that we have a rather extensive area involved. Other examples might be given but each would tend to point toward the same general fact, that a knowledge of the urinary findings is invaluable when considered in conjunction with all other available data.

SODIUM CHLORIDE: Normal elimination 11 to 15 grams in twenty-four hours.

INCREASED.

Chloroform.

Convalescence after acute infectious diseases.

Day, during.

Diabetes insipidus.

" mellitus.

Diet, corned beef.

" salt excess in.

" salt fish.

" salt pork.

" sea foods.

Digitalis.

Eating, excessive.

Epilepsy.

" following attack.

Exercise.

German measles.

Liquids, large amounts of.

Liver, cirrhosis of.

Malaria.

Massage.

Mineral waters.

Myelitis, acute.

Paralysis, general.

Potassium salts.

Prurigo.

Red blood cells, diseases causing destruction of.

Resorption of effusions.

Thyroid extracts.

Winter.

DECREASED.

Anæmia.

Anasarca.

Cachexia.

Carcinoma.

Cholera.

Chorea.

Chyluria.

Diarrhoea.	Poisoning, lead.
Diet, milk.	Puerperal fever.
" excessive starch in.	Pyemia.
Distilled water.	Pyrexia.
Hemorrhage.	Rheumatism, acute.
Impetigo.	Rickets.
Kidney, congestion of.	Scarlet fever.
Liver, acute yellow atrophy of.	Serous effusions.
Melancholia.	Starvation.
Nephritis.	Stomach, cancer of.
Night, during.	Toxemias.
Pemphigus.	Typhoid fever.
Pericarditis.	Vomiting.
Pleurisy.	Warm weather.
Pneumonia.	

SULPHURIC ACID.

The eliminated sulphates may be divided into three groups: preformed, ethereal and neutral. Little is known of the neutral sulphates, so, from a clinical standpoint, the preformed and ethereal sulphates are the ones of interest. The preformed sulphates indicate the degree of proteid metabolism and hence show how the proteid foods are being handled, and also the amount of tissue which is being broken down at the time. Excessive sulphate elimination may take place when the patient is on a high proteid diet but the amount eliminated is more apt to be of interest when we consider its prognostic significance in such diseases as pneumonia, typhoid, etc., where tissue waste enters largely into our considerations. A good idea is thus obtained of the tissue area involved or of the rapidity of destruction of that-tissue.

The ethereal or conjugate sulphates have another meaning and will be considered later under the head of Indican which is the representative of this group.

SULPHURIC ACID: Normal elimination 2 to 3 grams in twenty-four hours.

INCREASED.	Diet, meat.
Addison's disease.	Eczema.
Atrophy, progressive muscular.	Eggs.
Benzol.	Empyema.
Carcinoma.	Encephalitis.
Constipation.	Exercise.
Creosote.	Gastric hyperacidity.
Diabetes insipidus.	Indigestion, intestinal.
" mellitus.	Leukemia.

Lysol.	DECREASED.
Mastication, incomplete.	Bismuth.
Meningitis.	Bulgarian bacilli, preparations containing.
Myelitis.	Calomel.
Neurasthenia.	Convalescence from acute diseases.
Nux vomica.	Diarrhoea.
Pneumonia.	Diet, farinaceous foods.
Poisoning, lead.	“ milk.
“ ptomaine.	“ vegetable.
Pus.	Fasting.
Pyrexia.	Mastication, complete.
Rheumatism.	Nephritis, chronic catarrhal.
Salol.	Purgatives.
Toxemia.	Salicylates.
Tuberculosis.	
Turpentine.	

PHOSPHORIC ACID.

The phosphates appearing in the urine are derived principally from the food, and may be out of proportion to the amount ingested. There are two reasons for this, the first of which is the comparative insolubility of the inorganic salts of phosphorus, and the second, the great chemical affinity of phosphoric acid for neutral salts, notably those of calcium. In the second case the elements containing phosphoric acid and the mineral salts combine to form an insoluble compound. Hence we may have a high phosphate in-take with low elimination of the same from the kidneys. In such a case the intestines carry on the work and the phosphorus is eliminated in the feces.

A lowered elimination has more clinical significance than an increased amount, for the amount of phosphoric acid present is a good indication of the degree of ability of the kidney to do its work. Casts and albumin may be present but if the elimination of phosphoric acid is good it is possible to assume that a comparatively small area of kidney tissue is involved. On the other hand casts and albumin may be absent, but if the phosphoric acid elimination is persistently low, one should constantly bear in mind the possibility of a beginning nephritis.

Phosphaturia is a misleading term, for the phosphorus elimination through the kidneys may be low and at the same time many phosphatic crystals appear in the urine.

PHOSPHORIC ACID: Normal elimination 2.5 to 3.0 grams in twenty-four hours.

INCREASED.

Acute diseases (after crisis).

Anæmia.

Chloral.

Cholera infantum.

Chorea.

Diabetes insipidus.

" mellitus.

Diet, animal.

Encephalitis.

Epileptic attacks.

Exercise, hard muscular.

Gastric catarrh.

Glycerophosphates.

Hodgkin's disease.

Leukemia.

Mania, acute.

Meningitis.

Neurasthenia.

Pneumonia (late in disease).

Poisoning, phosphorus.

Potassium bromide.

Pyrexia.

Rheumatism, acute.

Rickets.

Salicylic acid.

Small-pox.

Stomach, dilatation of.

Tuberculosis, early.

Tumors, brain.

DECREASED.

Addison's disease.

Alcohol.

Arthritis.

Calcium carbonate.

Cocaine.

Diet, milk.

" vegetable.

Ether.

Gout.

Infections, acute (before crisis).

Liver, cirrhosis of.

Malaria, during attack.

Nephritis.

Osteomalacia.

Pneumonia (early in disease).

Pregnancy.

Pyuria.

Quinine.

Rest, during.

Rheumatism, chronic.

Tuberculosis (as disease progresses).

Typhoid.

Typhus.

INDICAN.

From a clinical standpoint Indican is probably the most important representative of the ethereal sulphates. It frequently makes its appearance because colon bacilli are able to reduce proteins forming indol, which is the first step in the formation of Indican. This readily accounts for the success often obtained in the treatment of intestinal toxemias by the administration of bulgarian bacilli, for they make the intestinal tract uninhabitable for the colon bacilli.

INDICAN PRESENT.

Addison's disease.

Anæmia, pernicious.

Appendicitis.

Bronchitis, with destruction of tissue.

Carcinoma of liver.

" " stomach.

Cholera.

Constipation.

Creosote.

Diet, meat.

Eggs.

Empyema.

Exercise, excessive.

Hypochlorhydria.

Lung, gangrene of.	" ptomaine.
Meningitis, cerebro-spinal.	Pus, absorption of.
Nux vomica.	Tabes.
Obstruction of small intestine.	Tonsilitis.
Pancreatic disease.	Toxæmia, intestinal.
Peritonitis.	Tuberculosis.
Poisoning, lead.	Turpentine.

SUGAR.

Of course, the term sugar covers lactose, pentose, levulose, etc. When we speak of sugar in the urine, however, we usually refer to glucose. The principal source of sugar is the carbohydrates which were taken as food. They are converted into glucose and stored in the liver and fed from it to meet the requirements of the organism. Glucose may, however, be derived from proteids or fats which may account for the great wasting taking place in some diabetic patients. It is possible to reduce the amount of glucose from 6 per cent. or 7 per cent. to nothing through the institution of dietetic measures, but in all probability such measures only reduce the strain caused in these patients by carbohydrate metabolism. A cure must be produced through some other means.

If sugar is present it is essential that we examine for the presence of Acetone and Diacetic acid, which see.

SUGAR PRESENT.	Convalescence from acute fevers.
Acromegaly.	Dementia, paralytic.
Alcoholism.	Diabetes mellitus.
Amyl nitrate.	Diphtheria, during convalescence from.
Apoplexy.	Epilepsy, following attacks.
Arteriosclerosis.	Ether.
Arthritis, rheumatoid.	Exophthalmic goitre.
Boils.	Fractured skull.
Brain, concussion of.	Functional neuroses.
" pressure from hemorrhage, etc.	Gastric ulcer.
Caffeine.	Gout.
Carbohydrates, excess in diet.	Hydrophobia.
Carbuncles.	Kidney, accompanying hemorrhage of.
Cerebral tumors.	La Grippe, during convalescence from.
Cervical vertebræ, fractures of.	Liver, cirrhosis of.
Cholera, during convalescence from.	" fatty degeneration of.
Chyluria.	Locomotor ataxia.
Cocaine.	

Malaria, during convalescence	Pituitary disease.
from.	Poisoning, lead.
Measles, during convalescence	" phosphorus.
from.	Portal obstruction.
Medulla, lesions of.	Pregnancy.
Melancholia.	Rabies.
Meningitis, cerebral.	Scarlet fever, during convalescence
" spinal.	from.
Mental strain.	Strychnine.
Mercuric chloride.	Syphilis.
Morphine.	Tabes.
Multiple sclerosis.	Tetanus.
Neurasthenia.	Theobromine.
Obesity.	Thyroid, after removal of.
Pancreas, carcinoma of.	" disease.
Pancreatitis, chronic.	" extracts.
Paresis.	Typhoid, during convalescence
Pertussis.	form.
Phloridzin.	

DIACETIC ACID AND ACETONE.

These substances are formed from decomposition of fats and proteids the result being beta-oxybutyric acid. This in turn breaks down to form diacetic acid and water and the diacetic acid in turn breaks down forming acetone and carbon dioxide. When small amounts of diacetic acid are formed the change to acetone commonly takes place with sufficient rapidity so that on examination of the urine only acetone is found. Diacetic acid may be found if examination is made as soon as the urine is passed, while the same sample may give a negative result if allowed to stand a few hours.

The elimination of carbohydrates from the diet of a diabetic patient with the consequent high proteid and fat in-take is often responsible for the presence of acetone in the urine. The finding of diacetic acid in the urine of these patients usually has grave prognostic significance.

DIACETIC ACID PRESENT.

Auto-intoxication.
Diabetes mellitus.
Diet, non-carbohydrate.
Digestive disorders.
Fasting.
Gastric ulcer.
Liver, cirrhosis of.

Morphinism.

Pregnancy, vomiting of.
Pyrexia.
Rectal feeding.
Toxæmias.

ACETONE PRESENT.

Addison's disease.
Alcohol.

Auto-intoxication.	Measles.
Carcinoma.	Melancholia.
Cerebral disease.	Nephritis.
Chloroform.	Pancreas, extirpation of.
Cyclic vomiting.	Paresis.
Diabetes mellitus.	Phosphorus poisoning.
Digestive derangements.	Pneumonia.
Diphtheria.	Pregnancy.
Eclampsia.	Psychoses.
Eggs.	Rectal feeding.
Epilepsy, after attacks.	Scarlet fever.
Ether.	Septicæmia.
Exophthalmic goitre.	Small-pox.
Fat.	Starvation.
Gastric ulcer.	Tabes.
Hyperpyrexia.	Tuberculosis (3d stage).
Inanition.	Typhoid.
Locomotor ataxia.	

DIAZO.

A number of different diseases and drugs may cause the presence of the diazo reaction. Typhoid, tuberculosis, measles and septic conditions are, however, the principal ones. When present in lung or kidney conditions, tuberculosis should always be thought of as the underlying cause. On the other hand, when the presence of one of these diseases is known it should be remembered that iodine or its compounds, and gallic and tannic acids, cause a negative reaction where otherwise a positive reaction would have been found.

DIAZO REACTION PRESENT.

Alcohol.	Morphine.
Carcinoma.	Naphthalene.
Chrysarobin.	Nephritis (tubercular).
Creosote.	Peritonitis (tubercular).
Creosol.	Phenol.
Dionin.	Pleurisy (tubercular).
Diphtheria.	Pneumonia.
Erysipelas.	Scarlet fever.
Guaiacol.	Septicemia.
Heroin.	Tuberculosis.
Measles.	Typhoid.

ALBUMIN.

When we speak of albumin we commonly mean serum albumin. Globulin, hemoglobin, albumose, peptone, etc., at times

have a bearing on the case, but in the great majority of instances serum-albumin is the one which has the greatest clinical significance. Albuminuria may be caused by changes in the kidney epithelia, changes in the blood, or changes in the blood pressure. Any one of these causes may allow of the passage of albumin from the blood stream through the delicate animal membrane, composed of epithelial cells, into the tubules of the kidney.

It is possible to detect albumin in many cases, probably in the majority of people, if a delicate enough test is used. Such delicate tests have no value to patient or physician, and should be discarded for those which have been proven to react to not less than 1 to 40,000 or 50,000 parts of albumin.

Functional albuminurias are a fact and the cause such as excessive proteid in-take, unusual muscular exercise, etc., should be carefully looked for when no apparent cause has been found which will account for the albumin. Essential albuminurias are often spoken of but undoubtedly each one has an underlying cause which will account for the condition. Albumin is discovered, not a few times, without the presence of inflammation in the kidney. Mechanical injury, as from floating kidney, toxemias producing self-hemolysis, etc., should be guarded against.

So much may be learned from the presence or absence of albumin that many physicians have allowed themselves to overlook the value of most of the other chemical tests. Though the finding of albumin and casts is of such great diagnostic import, the mere fact that one has looked for their presence does not signify that the patient has received the attention that his case warrants. This I hope has been proven by the foregoing pages.

ALBUMIN PRESENT.

Abscesses draining into urinary tract.
Alcohol.
Amyloid.
Anæmia, pernicious.
Anæsthetics.
Aneurysm.
Antimony.
Arsenic.
Blood.
Blood pressure increased.
Bronchitis, chronic.
Burns.

Calculus.
Cantharides.
Carcinoma.
Cerebral tumors.
Cerebro-spinal meningitis.
Cholera.
Colic.
Delirium tremens.
Diabetes.
Diphtheria.
Eggs.
Endocarditis.
Epilepsy.
Erysipelas.

Exercise, violent.	Osler's disease.
Exophthalmic goitre.	Ovarian tumors
Faradism.	Oxaluria.
Gastric ulcer.	Pancreatis.
Gastro-intestinal diseases (especially in infants).	Paratyphoid.
Gonorrhœa.	Phenol.
Gout.	Phenol.
Heart, valvular disease of.	Phosphorus.
Hemoglobinuria, paroxysmal.	Pneumonia.
Hepatitis, acute.	Pregnancy.
Hyperpyrexia.	Prostatic fluid.
Hydrophobia.	Prostatitis.
Influenza.	Purpura.
Intestinal tumors.	Pus.
Jaundice.	Rabies.
Kidney, acute atrophy of.	Raynaud's disease.
" congestion of.	Rheumatism, acute.
" cystic disease of.	Salicylic acid.
" embolis in.	Sandalwood oil.
" fatty.	Scabies.
" tubercular.	Scurvy.
Lead poisoning.	Seminal discharge.
Leucorrhœa.	Silver.
Leukemia.	Spine, curvature of.
Liver, acute yellow atrophy of.	Stomach, dilatation of.
Meat.	Surgical shock.
Mediastinal conditions.	Syphilis.
Medulla, lesions of.	Tetanus.
Melancholia.	Tuberculosis, acute.
Mercury.	Uranium.
Migraine.	Urethritis.
Milk.	Variola.
Morphine.	Vena cava, pressure on inferior.
Mumps.	Weil's disease.
Nephritis, acute.	Yellow fever.
" chronic.	

CONCLUSION: The author claims no originality for much of the data, though numerous additions have been made from facts gathered through his own experience. Other chemical phases might be handled in a like manner, but he hopes that sufficient evidence has already been given to prove that there is great diagnostic and prognostic significance in the Urinary Findings when viewed from a Chemical Standpoint.

39 West 67th Street.

Things Previously Known

BY

W. FAWCETT-SHAW, CLASS OF 1912.

Assistant Gynecologist, Cumberland Street Hospital.

THE prevailing idea insists that civilization tends to check the development of women and increase the burdens of maternity. It is demanded of the obstetrician that there shall be a lessening of the pain incident to child-birth. The subject I present for your consideration are our thoughts on the following: (1) What is pain as it applies to parturition? (2) What mechanical and physiological processes are essential? (3) What agents should be used to give relief?

The pains of parturition seem to be made up from a combination of common sensibility, pressure and muscular sense. To these may be added fear or worry.

We are conscious of the several parts of our body by muscular sense. This determines our feeling either by vigor or of weariness, which latter may lead to exhaustion. With pressure it is obvious that the more sudden the pressure the greater the sensation, which becoming excessive may take on characteristics analogous to pain. While common sensibility is that constant smouldering sense the embers of which may at any moment be fanned into the flame of pain.

Physiologists emphasize that parturition is a reflex act very poorly assisted by volition. Reflex acts may be painful. Complex reflex actions show themselves in a resulting movement which has a definite purpose. The pains of the first stage of labor are due to the intrinsic contractions of the uterus; they are nagging, irritating and influenced by the mental attitude of the patient. The pains of the second stage are due not only to pressure upon the nerve endings in the uterus wall, but also to stretching of the soft parts, and augmented by the contraction of the muscles of the abdominal wall. The force exerted here is said to cause an intra-uterine pressure of from $8\frac{1}{2}$ to

27½ pounds. The pains of the third stage are a feeble manifestation of second stage pains and have for their purpose the expulsion of a foreign body. Pressure, muscular sense, and common sensibility unite to produce a reflex movement which is expulsive and purposeful, the result being that one more unit is thrust upon the world. But their combined onslaught produces pain which with fear calls for relief earlier than was formerly thought necessary.

In considering the mechanics of parturition we need to remember that we have a passage and a passenger, which in his or her transit must have applied the slogan, "Safety first." Coincident with full dilatation there should be going on a moulding of the presenting part, and a gradual propulsion of the foetus into the pelvis. Until we are assured that these conditions are being met any remedial agent must be such as will not interfere with obstetrical surgery should that become necessary. But given a normal passage, a healthy passenger, and our patient in good condition we may apply the sea captain's motto, "Act as judgment says is proper. Port or starboard, back or stop her."

Dr. Sanders in his article, "Anesthetics in Obstetrical Cases," states that "In labor the prospect of relief from suffering makes the patient welcome an anesthetic with confidence."

Gwathmey insists in all cases that "The agent should be selected with respect to the individual case." Connell reiterates that "The recovery zone must be so gauged that the patient leave the table practically conscious."

Just as there are three stages to labor, so it would seem to me that there are three forms of relief, namely, anodyne, analgesia and anesthesia.

The agents in common use are morphine and its derivatives, scopolamine, chloroform, ether, ethyl chloride, nitrous oxide and oxygen, or any combination of these.

We have mentioned that the long nagging first stage is influenced more or less by the mental state of the patient. If labor is established what better remedy than morphine can be used over this period. It lessens the sensory impulses and, therefore, relieves pain. It lessens the action of the motor areas and, therefore, allows relaxation of the musculature. It is a

cardiac stimulant with a strong slow pulse, and most important of its actions, it gives to the patient a mental state which enables her to remain quiet and feel comfortable.

Scopolamine has been added, but this drug has no apparent virtue unless used in repeated doses. Its use in our hands has been disappointing. Its chief claim to recognition is stated to be that it lessens the memory for pain, but we have only seen it do this where, in addition, it caused excitement and delirium.

These factors of themselves we would not object to, but we do feel that the dosage necessary to produce its effect is so uncertain, so much a matter of personal equation, and so exacting, both to the patient and her physician, that except in the hands of very well trained experts, and only where Professor Kronig's technique can be rigidly applied, it had better be left out of our armamentarium.

On the other hand, a small dose of ether in oil given as a colonic retentive and repeated, if necessary, has worked far more satisfactorily in our hands.

As soon as the expulsive pains of the second stage of labor begin analgesia seems to be called for. For this result chloroform, ether and nitrous oxide—oxygen—are in use. Chloroform is the most widely used of this trio, but we are unable to tell on what scientific basis it has become popularized. Blumgarten states that it is distinctly more injurious to the kidney than ether. Yandel Henderson, of Yale University, reminds us that "It is not depression but an abnormally intense irritability of the heart which produces sudden heart failure and complete and irrecoverable fall of arterial pressure under light chloroform anesthesia."

This statement has been confirmed by Levy, of the University of London. Yet there are those who, speaking with authority, say that in obstetrics chloroform must be administered only when the patient has severe pain, as complete anesthesia is not desired.

Either, on the other hand, is a safe and useful agent. Blumgarten maintains that it is suitable "Where the heart action is weak or when the kidneys are diseased." Like chloroform, it does produce albumin in the urine and destroys red blood cells.

Its obstetric use as an analgesic lies in the relaxation it gives to the musculature and its lessening of reflex action. Administered with Sanders' automatic dropper and rebreathing bag a steady, painless state can be maintained with little retardation to the process of labor.

Nitrous oxide-oxygen is the ideal agent wherewith to maintain analgesia. There is lessened brain activity with definite loss of the sense of pain. The physiologists tell us that movements of the uterus are readily excited when the blood ceases to be fully arterialized, the venous blood being not only a direct stimulant to the uterine muscle but an excitant of the nervous centre which controls this reflex act.

Nitrous oxide-oxygen prevents complete oxygenation of the hemoglobin, but it does not destroy red blood cells. The heart action is slow and strong. The blood pressure is slightly raised. No destructive action on the epithelium of the kidney is known.

In the greatest number of labors and during the major part of each labor an analgesic is given with the idea of "taking the edge off the pains." This agent not only maintains the best analgesia, but can be used over many hours with safety. The only contra indication to its use is mechanical obstruction to the respiratory passages. Its chief advantage is that in toxemia with the oxygen supply raised it is safer than any other agent.

Most obstetricians are agreed, however, that analgesia must give place to anesthesia before the completion of the second stage. The expulsive pains have become stronger and more continuous, the Perineum, Rectum and bladder are being subjected to increasing pressure and above all the delicate mucocutaneous structures are being called upon to play their part. We not only have increased excitation leading to pain but the chances of laceration as well.

Nitrous oxide-oxygen anesthesia can be induced to retard labor at this time, but to my mind ether in combination with these agents enhances their usefulness over this brief interval. I have no scientific reason to give for this belief except that the stimulative effect of the ether and its more complete relaxation of the musculature prove the value of its use.

Prior to the delivery of the placenta no agent is necessary. The patient will usually wake refreshed from her short sleep.

But if the placenta must be expelled by expression analgesia should be resorted to. If there has been a laceration of the second degree the combined anesthesia should be used especially if a muscle approximation and subcuticular perineal suturing is desired. Ether as an adjuvant to nitrous oxide-oxygen is also essential when low forceps are necessary. The amount used need never be more than a few drachms.

Professor Kronig states as a disadvantage of his method of twilight sleep that "transitory states of confusion of mind occur. These states of excitability make an unpleasant impression on the family." This is only mentioned because in a clinical study of this method in a New York institution we observed that toward the end of the second stage ethyl chloride was used to control this condition and the consequent contortions of the patient. Since ethyl chloride is said to weaken the heart more than chloroform and cannot be prolonged in administration, we fail to see its use as a scientific adjuvant to any method of painless child-birth.

Case history. Mrs. C. Primipara, æt. 30. Admitted to hospital 9:30 P. M. 1-17-15.

Physical examination: Heart and lungs normal. B. P. normal. Urinalysis normal, measurements normal. No disturbances throughout period of gestation. On admittance. Lumbo-sacral pain passing through abdomen into thighs. Pulse, 90. Mental state: Great fear that she will die in labor. Examination: Presentation vertex; position, L. O. A. Fetal heart: Left lower abdominal quadrant. Rate, 120. Presenting part fixed in pelvic brim. Vaginal examination: Dilatation of two fingers. Presenting part cannot be balotted from pelvic brim.

Diagnosis: Labor, vertex, L. O. A.

Patient prepared. Bath. Enemas and surgical cleaning of the vulva and perineum.

Patient placed in bed. Narcophin, grs. $\frac{1}{2}$, hypodermatically. Patient slept entire night.

1-18-15. 9:00 A. M. Examined after light breakfast.

Maternal pulse 80. Fetal heart 120.

Pains at ten minute intervals.

Dilatation, three fingers.

Colonic retentive. Ether $\mathfrak{z}\text{ii}$, olive oil $\mathfrak{z}\text{i}$.

Slept until 2:00 P. M.

Examination at 2:30 P. M.

Maternal pulse 80. Fetal heart 120.

Dilatation, four fingers.

Pains at six minute intervals; expulsive in character and growing in intensity.

Water in sips.

Narcophin, grs. $\frac{1}{4}$.

Colonic retentive. Ether $\bar{5}$ ii, olive oil $\bar{5}$ ii.

5:15 P. M. Full dilatation. Maternal and fetal pulse as heretofore. Complains of pain.

Pains are two minutes apart.

Patient removed to delivery room.

Nitrous oxide-oxygen analgesia administered.

5:35 P. M. Rupture of the membranes.

6:00 P. M. Head on perineum. Ether added to nitrous oxide-oxygen and anesthesia induced 6:20 P. M.

Birth of girl. Weight, $7\frac{1}{2}$ pounds. First degree laceration.

6:30 P. M. Placenta delivered intact.

Ergotole m. xv administered intramuscularly. First degree laceration repaired under analgesia. Patient removed to bed in good condition. Uneventful recovery.

CONCLUSIONS.

(1) The pains of labor, while intrinsic to the uterus, are intensified by the mental state of the patient during the first stage. Morphine or its derivatives seems to be the leading agent for the relief of this state

(2) The expulsive pains of the second stage can best be controlled by analgesia, preferably through the administration of nitrous oxide-oxygen.

(3) Toward the close of this stage anesthesia becomes necessary and ether a useful adjuvant to the gases until the child is born.

(4) The combined use of these several agents has a scientific basis and a practical result.

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A Medical Student's Lament.

I certainly am unlucky
 In the full sense of the word;
 No need to ask me questions,
 As they would be absurd.

One professor calls me lazy,
 Another claims I'm thick;
 The way that I am treated
 Is enough to make one sick.

So college mates take warning,
 And warning let it be;
 Always be attentive
 Lest you join my company.

—M. J. J. C.

A COINCIDENCE.

Here is a true story from Paris. A batch of conscripts were to be examined by the army doctor. The latter, after seeing that everything was ready in the room, called out to the soldier attendant:

"Send in the first man."

The attendant shouted, "Adam!" And in walked a nude man, whose name it was, and who happened to be the first on the list.—*Sunday American*.

Doctor—There's the original prescription. I can't imagine how you made that mistake in putting it up!

Druggist—Humph! I must have mixed your signature in with the other ingredients.—*Judge*.